

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in and relating to Filters for Tobacco Smoke

We, SOCIETE JOB ANCIENS ETABLISSEMENTS BARDOU, JOB & PAULHAC, a French Body Corporate, of 72 Boulevard de Strasbourg, Toulouse, Haute-Garonne, France, do hereby

5 declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The filters now in use for filtering tobacco smoke, and particularly cigarette smoke, consist normally of a strip of paper wound or folded parallel to the longitudinal axis in such a way as to form several superimposed layers, 15 with or without the interposition of a sheet of filter material. The strips are of creped paper or of cellulose wadding, the interposed filter sheets of cotton. Other types of filters consist of an agglomerate of threads arranged parallel 20 to the longitudinal axis of the filter.

In all these filters there are channels of relatively large section between the corrugations of the creped paper or of the cellulose wadding or even between the threads. The 25 general direction of these channels is parallel to the longitudinal axis of the filter and they communicate directly with the two ends of the filter.

30 Thus the greater part of the smoke passes through these channels and not through the filter whose action is thus impaired.

Another characteristic of these filters is that their efficiency is in direct relationship with their weight. Normally for a given type of 35 filter and for a given density, the effectiveness with which tars and nicotine is retained can only be varied by altering the length of the filter and therefore its weight.

40 The object of the present invention is to overcome these disadvantages.

According to the invention there is provided a filter for tobacco smoke of the type in which the filter material is formed by the superimposition and subsequent rolling on them- 45 selves of at least two layers of sheet material

each having parallel channels which are inclined in relation to the longitudinal axis of the filter, characterized in that the channels of the two sheets are oppositely inclined at different angles, all the channels being directed 50 along helical paths when the layers of material are wound to form the filter.

According to a feature of the invention a certain proportion of the channels do not traverse the filter for its whole depth, said 55 proportion depending on the slope of the channels and the dimensions of the respective sheet.

According to another feature of the invention several sheets of material are superimposed 60 before winding round so as to increase the proportion of channels not traversing the filter.

Specific embodiments of tobacco smoke filters in accordance with the invention will now be described by way of example with 65 reference to the accompanying drawings, in which:—

Figures 1 to 4 represent sections of the channels in various embodiments;

Figure 5 represents a perspective view of a 70 filter; and

Figure 6 shows the superimposition of two sheets with channels sloped in opposite directions.

The filter in accordance with the invention 75 and represented in these drawings consists of a material such as paper, woven fabric, a film of synthetic material or other suitable material. This material is in the form of two layers or sheets superimposed one above the other as 80 shown in Figure 6.

In each sheet are arranged channels oppositely and differently inclined across the rectangles formed by the said sheets (see 85 Figure 6).

The section of these channels may be of any suitable form and Figures 1 to 4 show examples of such sections, namely corrugations in 90 Figures 1 to 3 and concertina type folding in Figure 4.

The filter shown in Figure 5 is obtained by winding on themselves two sheets of material superimposed as indicated above.

There is thus obtained a filter having the form of a cylinder having ducts arranged in a helix in relation to the longitudinal axis of the cylinder, the said ducts being produced by the inclined channels mentioned above, which have taken the form of helices or spirals under the effect of the winding of the sheets on themselves.

The duct 1 shown in dotted line ends at the upper surface in an aperture 2 and at the lower surface in an aperture 3; its form is helical and its length is substantially greater than the height of the filter, which increases its effectiveness, as the smoke has to follow a longer path.

The duct 4, which ends at 5 in the upper surface, does not traverse the filter for its whole height. It stops at a point 6 which corresponds to the edge of the wound or folded sheet.

The proportion of the ducts 4 which do not traverse the filter for its whole height depends on the inclination of the channels and the size of the sheet.

There is thus obtained a filter material whose effectiveness can be varied by changing the angle of inclination and shape of the channels and the number of superimposed sheets, without having to vary the depth, and hence the weight, of the filter.

The invention is not of course restricted to the embodiments described above and variants can easily be conceived which are within the scope of the invention as set out in the claims. Furthermore, the filter materials may, in known manner, be enveloped in a small cylindrical paper tube or there may be used filter

layers interpolated between the rolled or folded sheets.

Filters produced in accordance with the invention are more particularly intended for the manufacture of filter tip cigarettes, but they may also be used as filters for cigarette-holders, tobacco pipes and similar articles.

WHAT WE CLAIM IS:—

1. A filter for tobacco smoke of the type in which the filter material is formed by the superimposition and subsequent rolling on themselves of at least two layers of sheet material each having parallel channels which are inclined in relation to the longitudinal axis of the filter, characterized in that the channels of the two sheets are oppositely inclined at different angles, all the channels being directed along helical paths when the layers of material are wound to form the filter.

2. A filter for tobacco smoke as claimed in claim 1, characterized in that a certain proportion of the channels do not traverse the filter for its whole depth, said proportion depending on the slope of the channels and the dimensions of the respective sheet.

3. A filter for tobacco smoke as claimed in claim 2, characterized in that several sheets of material are superimposed before winding round so as to increase the proportion of channels not traversing the filter.

4. A filter for tobacco smoke substantially as herein described with reference to and as illustrated in the accompanying drawings.

SOCIETE JOB ANCIENS ETABLISSEMENTS BARDOU, JOB & PAULHAC
Per BOULT, WADE & TENNANT,
111/112 Hatton Garden,
London, E.C.1,
Chartered Patent Agents.

FIG. 5

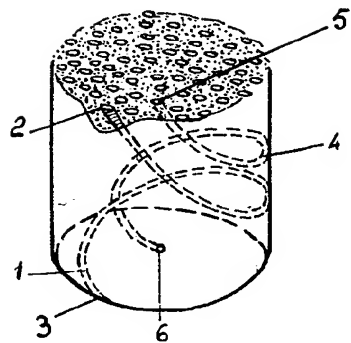
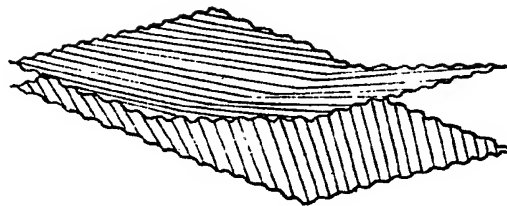


FIG. 6



~~~~~ FIG. 1

~~~~~ FIG. 2

~~~~~ FIG. 3

~~~~~ FIG. 4